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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/864,280

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Hajime Kimura

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EXAMINER

YE, LIN

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/864,280

Applicant(s)

KIMURA, HAJIME

Examiner

Lin Ye

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-76 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2615

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 19-20 and 67 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. U.S. Patent 6,072,206 in view of Roberts U.S. Patent 5,541,654.

Referring to claim 1, the Yamashita reference discloses in Figure 1, a driving method of a MOS sensor (See Col. 1, lines 10-11) comprising a plurality of pixels in an image pick up unit, each of said pixels comprising: a reset transistor (8, see Col. 1, line 20); a photoelectric conversion element (2, see Col. 1, lines 14-15) having a first terminal connected to one of source or drain terminals of said reset transistor, and a second terminal connected to a photoelectric conversion element side power source line; a reset signal line (14, see Col. 1, line 29) electrically connected to a gate terminal of said reset transistor (8); a signal amplifier circuit (amplifying transistor 4, see Col. 1, line 15) having an input terminal connected to said one of the source or drain terminals of said reset transistor (8); and a reset side power source line connected to other one of the source or drain terminals of said reset transistor, said method comprising the steps of: sequentially selecting the plurality of pixels to output image signals by horizontal address line (12) (See Col. 1, lines 42-60). However the

Art Unit: 2615

reference does not explicitly show the method to reset said plurality of pixels at a **same time**; selecting a **part** of said plurality of pixels to output signals of the selected pixels.

The Roberts reference discloses in Figures 1 and 6, an image MOS sensor (10) allows the pixels of the array to all be simultaneously reset (See Col. 11, lines 60-65); and the control circuit (32) selecting at least a part of the pixels to output signals of the selected pixels (i.e., windows 172 or 174 as shown in Figure 6, see Col. 13, lines 20-25 and Col. 10, lines 9-21). The Roberts reference is evidence that one of ordinary skill in the art at the time to see more advantages the image MOS sensor can simultaneously reset all the pixels and be able to select a part of the pixels to output image information so that all the pixels start the integration (storage) in the same time and to be selected to exclude unwanted or undesirable image information. For that reason, it would have been obvious to see the method to reset said plurality of pixels in the MOS sensor at a **same time**; selecting a **part** of said plurality of pixels to output signals of the selected pixels disclosed by Yamashita.

Referring to claim 2, the Yamashita and Roberts references disclose all subject matter as discussed in respected claim 1, and the Roberts reference shows that the control circuit (32) can select the pixels of only a limited area (i.e. windows 72 or 74) of the image pickup unit (MOS sensor 10) to output signals from the selected pixels as shown in Figure 6 (See Col. 13, lines 20-25).

Referring to claim 19, the Yamashita and Roberts and references disclose all subject matter as discussed in respected claim 1.

Referring to claim 20, the Yamashita and Roberts and references disclose all subject matter as discussed in respected claim 2.

Referring to claim 67, the Yamashita and Roberts and references disclose all subject matter as discussed in respected claim 1, and the Yamashita reference discloses the electronic apparatus is selected from digital still camera (MOS type solid state image sensor).

3. Claims 3-6, 11-18, 21-24, 29-30 and 33-34, 48-51 and 53-56, 68-71 and 73-76 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. U.S. Patent 6,072,206 in view of Roberts U.S. Patent 5,541,654 and Beiley U.S. Publication 2001/0007471.

Referring to claim 3, the Yamashita and Roberts references disclose all subject matter as discussed in respected claim 1, except that these references do not explicitly show determining a storage period in accordance with a period from the time of said resetting to a time when the signal of the selected pixels saturate.

The Beiley reference discloses in Figure 2, a method for controlling a MOS type image sensor including: determining a storage (integration) period in accordance with a period from the time of said resetting to a time when the signal of the pixel saturate (See page 2, [0029]). The Beiley reference is evidence that one of ordinary skill in the art at the time to see more advantages the image MOS sensor determining a storage (integration) period in accordance with a period from the time of said resetting to a time when the signal of the selected pixels saturate so that the storage period elapses before saturation of pixel occurs and the image signal can be

accurately measured without any over blooming. For that reason, it would have been obvious to see the method to determine a storage period in accordance with a period from the time of said resetting to a time when the signal of the selected pixels saturate disclosed by Yamashita.

Referring to claim 4, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 3, and the Bailey reference discloses one of the signals has largest signal amplitude (e.g., the pixel 100 in the group has reached to saturation level which represents the maximum intensity of light, see page 2, [0029]) among the signals of the selected pixels.

Referring to claim 5, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 3.

Referring to claim 6, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 4.

Referring to claim 11, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 3, and the Roberts reference discloses wherein the signals are outputted exclusively from those of the plurality of pixels of said image pick up unit that belong to a limited area (i.e., windows 172 and 174 in Figure 6, see Col. 13, lines 20-30).

Referring to claim 12, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 11.

Referring to claim 13, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 11.

Art Unit: 2615

Referring to claim 14 the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 11.

Referring to claim 15, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 3, and the Roberts reference discloses wherein the image of an object is picked up by using said storage period (integration period or exposure period).

Referring to claim 16, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 15.

Referring to claim 17, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 15.

Referring to claim 18, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 15.

Referring to claim 21, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 3.

Referring to claim 22, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 4.

Referring to claim 23, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 5.

Referring to claim 24, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 6.

Referring to claim 29, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 11.

Art Unit: 2615

Referring to claim 30, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 11.

Referring to claim 33, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 17.

Referring to claim 34, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 17.

Referring to claim 48, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 5, and the Yamashita discloses a mobile information terminal (a solid state image sensor for digital camera) using the MOS sensor.

Referring to claim 49, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 48.

Referring to claim 50, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 48.

Referring to claim 51, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 48.

Referring to claim 53, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 48.

Referring to claim 54, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 48.

Referring to claim 55, the Yamashita, Roberts and Beiley references disclose all subject matter as discussed in respected claim 50.



Referring to claim 56, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 48.

Referring to claim 68, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 3 and 67.

Referring to claim 69, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 4 and 67.

Referring to claim 70, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 5 and 67.

Referring to claim 71, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 6 and 67.

Referring to claim 73, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 12 and 67.

Referring to claim 74, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 13 and 67.

Referring to claim 75, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 14 and 67.

Referring to claim 76, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 15 and 67.

4. Claims 7-10, 25-28, 31-32, 35-36 and 52 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. U.S. Patent 6,072,206 in view of Roberts U.S. Patent 5,541,654, Bailey U.S. Publication 2001/0007471 and Morris et al. U.S. Patent 6,665,010.

Art Unit: 2615

Referring to claim 7, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claim 3, except that the references do not explicitly states a value of said storage period is set by irradiating said image pick up unit with light having a highest intensity among lights which have been reflected by an object to enter said image pick up unit.

The Morris reference discloses in Figures 5-11, a digital imager has a premetering mode (See Col. 3, lines 63); and sets a storage period (integration time  $T_{INT}$ ) based on irradiating the imager with light having a highest intensity among lights (e.g., when ninety percent of the maximum possible energy has been received by the group 113, See Col. 4, lines 37-45). The Morris reference is evidence that one of ordinary skill in the art at the time to see more advantages the storage period set by irradiating the image pick up unit with light having a highest intensity among lights when the imager has the brightness of a different portion, so that the primary storage period can be determined and the dynamic rang of captured imaged can be optimized. For that reason, it would have been obvious to see the value of said storage period is set by irradiating said image pick up unit with light having a highest intensity among lights which have been reflected by an object to enter said image pick up unit by Yamashita.

Referring to claim 8, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 9, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 10, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 25, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 26, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 27, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 28, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 7.

Referring to claim 31, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claims 11 and 25.

Referring to claim 32, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claims 11 and 26.

Referring to claim 35, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 17 and 25.

Referring to claim 36, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claim 17 and 26.

Referring to claim 52, the Yamashita, Roberts, Bailey and Morris references disclose all subject matter as discussed in respected claims 10 and 50.

5. Claims 37-41, 43-47, 57-61 and 63-66 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. U.S. Patent 6,072,206 in view of Roberts U.S.

Art Unit: 2615

Patent 5,541,654, Bailey U.S. Publication 2001/0007471 and Kamiko U.S. Patent 6,307,956.

Referring to claims 37-41, 43-47 and 57-61 and 63-66, the Yamashita, Roberts and Bailey references disclose all subject matter as discussed in respected claims 1 and 3-6, except that the references do not explicitly states a fingerprint scanner using the MOS sensor.

The Kamiko reference discloses in Figures 15-18, an inexpensive, miniaturized fingerprint scanner (22, see Col. 13, lines 13-15) using a two-dimensional MOS image sensor (See Col. 12, lines 8-24). The Kamiko reference is evidence that one of ordinary skill in the art at the time to see more advantages the image MOS sensor is used into the fingerprint scanner so that scanner can be more compact and portable than the regular CCD fingerprint scanner. For that reason, it would have been obvious to see the MOS sensor is used into the fingerprint scanner disclosed by Yamashita.

6. Claims 42, 62 and 72 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. U.S. Patent 6,072,206 in view of Roberts U.S. Patent 5,541,654, Bailey U.S. Publication 2001/0007471, Morris et al. U.S. Patent 6,665,010 and Kamiko U.S. Patent 6,307,956.

Referring to claim 42, the Yamashita, Roberts, Bailey, Morris and Kamiko references disclose all subject matter as discussed in respected claims 10 and 37.

Referring to claim 62, the Yamashita, Roberts, Bailey, Morris and Kamiko references disclose all subject matter as discussed in respected claims 10 and 37.

Art Unit: 2615

Referring to claim 72, the Yamashita, Roberts, Bailey, Morris and Kamiko references disclose all subject matter as discussed in respected claims 10 and 67.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Leving et al. U.S 6,040,570 discloses a CMOS-based imaging system having an array of APS pixel circuits.
- b. Yandid-Pecht et al. U.S. 6,515,702 discloses an integrated CMOS semiconductor-imaging device having two modes operation.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Lin Ye** whose telephone number is **(703) 305-3250**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to:


(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA., Sixth Floor (Receptionist).

Art Unit: 2615

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Lin Ye  
September 16, 2004



ANDREW CHRISTENSEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600